

CLAIMS

1. A vending machine apparatus comprising,
  - 5     • a housing defining an internal cavity,
  - an article storage area inside the cavity, the article storage area being subdivided into a plurality of article storage sub-compartments, each article storage sub-compartment having an opening at a dispensing end thereof for passage of stored articles therethrough during a dispensing operation; and
  - 10     • an air barrier arrangement comprising,
    - a sheet-like member having a plurality of flaps formed therein,
    - said sheet-like member being positioned in common with the open dispensing ends of a plurality of the article storage sub-compartments, and
    - wherein a sub-plurality of said flaps, including a sub-plurality of only one flap, is in alignment with a corresponding one of the article storage sub-compartments, each of said sub-plurality of flaps allowing for the passage of stored articles therethrough during a dispensing operation from the corresponding one of the article storage sub-compartments that is aligned therewith.
  - 20     2. The apparatus of claim 1, wherein said air barrier arrangement comprises a perimeter frame member formed of a relatively inflexible material which is attached to and supports therein a sheet-like member formed of a relatively flexible material.
  - 25     3. The apparatus of claim 1, wherein the plurality of flaps of the sheet-like member are uniformly shaped and uniformly distributed in their alignment with the article storage sub-compartments.
  - 30     4. The apparatus of claim 1, wherein the flaps of the sheet-like member comprise a plurality of pairs of opposed flaps, the abutting ends of the opposed flaps being substantially aligned with the center of the opening at the dispensing end of the corresponding sub-compartment aligned therewith.
  - 35     5. The apparatus of claim 2, wherein said flaps have one perimeter edge which is connected in a hinged manner to the perimeter frame member, and a free edge which abuts the free edge of an opposed flap formed in the sheet-like member.
  - 40     6. The apparatus of claim 3, wherein the plurality of flaps are formed integrally with the sheet-like member.
  - 45     7. The apparatus of claim 5, wherein the abutting ends of the opposed flaps are substantially aligned with the center of the opening at the dispensing end of the corresponding sub-compartment aligned therewith.
  8. The apparatus of claim 1, including a thermal separator which is in addition to the air barrier arrangement, said thermal separator operating in common with a plurality of said sub-compartments.
  9. The apparatus of claim 8, wherein the thermal separator comprises a door connected for hinged operation over a dispensing-end opening in the article storage area.

10. The apparatus of claim 8, wherein the thermal separator comprises a laminar flow of air.
- 5    11. The apparatus of claim 9, wherein the laminar flow of air uses cooled air.
12. A barrier arrangement adapted for use in a vending machine apparatus including inside the machine an article storage compartment for storing therein stacks of articles to be dispensed, the article storage compartment having an opening at a dispensing end thereof for passage of selected ones of the stored articles therethrough during a dispensing operation, said barrier arrangement comprising:
  - a sheet-like member having a plurality of flaps formed therein, said sheet-like member adapted for being positioned in common with the opening in the article storage compartment, with a sub-plurality of said flaps being in alignment with a corresponding stack of the articles stored in the article storage compartment,
  - 15    each of said sub-plurality of flaps allowing for the passage of stored articles therethrough during a dispensing operation from the corresponding stack of the articles that is aligned therewith.
- 20    13. The arrangement of claim 12, wherein said barrier arrangement comprises a perimeter frame member formed of a relatively inflexible material which is attached to and supports therein a sheet-like member formed of a relatively flexible material.
- 25    14. The arrangement of claim 12, wherein the plurality of flaps of the sheet-like member are uniformly shaped and uniformly distributed in their alignment with the stacks of the articles stored in the article storage compartment.
- 30    15. The arrangement of claim 12, wherein the flaps of the sheet-like member comprise a plurality of pairs of opposed flaps, the abutting ends of the opposed flaps being substantially aligned with the center of the stack of the articles stored in the article storage compartment that is aligned therewith.
- 35    16. The arrangement of claim 12, wherein the article storage compartment is refrigerated, and the barrier arrangement acts as a thermal barrier between the cooled environment inside the refrigerated article storage compartment and the remainder of the inside of the vending machine apparatus.
- 40    17. The arrangement of claim 12, wherein the plurality of flaps are formed integrally with the sheet-like member.
- 45    18. The arrangement of claim 13, wherein said flaps have one perimeter edge which is connected in a hinged manner to the perimeter frame member, and a free edge which abuts the free edge of an opposed flap formed in the sheet-like member.
- 50    19. The arrangement of claim 17, wherein the abutting ends of the opposed flaps are substantially aligned with the center of the stack of the articles stored in the article storage compartment that is aligned therewith.
20. A vending machine apparatus comprising,- 50    • a housing defining an internal cavity,

- a refrigerated article storage compartment located inside the cavity, the article storage compartment being subdivided into a plurality of article storage sub-compartments, each article storage sub-compartment having an individual opening at a dispensing end thereof which is aligned with a common opening in the refrigerated article storage compartment, said stored articles passing through said individual and common openings during a dispensing operation; and
  - a first-type thermal separator arrangement comprising,
    - a sheet-like member having a plurality of flaps formed therein,
    - said sheet-like member being positioned in the common in the refrigerated article storage compartment, and
    - wherein a sub-plurality of said flaps, including a sub-plurality of only one flap, is in alignment with a corresponding one of the article storage sub-compartments, each of said sub-plurality of flaps allowing for the selective passage of stored articles therethrough during a dispensing operation from the corresponding one of the article storage sub-compartments that is aligned therewith.
21. The apparatus of claim 20, wherein said first-type thermal separator arrangement comprises a perimeter frame member formed of a relatively inflexible material which is attached to and supports therein a sheet-like member formed of a relatively flexible material.
22. The apparatus of claim 20, wherein the plurality of flaps of the sheet-like member are uniformly shaped and uniformly distributed in the sheet-like member.
23. The apparatus of claim 20, wherein the flaps of the sheet-like member comprise a plurality of pairs of opposed flaps, the abutting ends of the opposed flaps being substantially aligned with the center of the opening at the dispensing end of the corresponding sub-compartment aligned therewith.
24. The apparatus of claim 20, including a second-type thermal separator which is in addition to the first-type thermal separator arrangement, said second-type thermal separator operating in common with a plurality of said sub-compartments.
25. The apparatus of claim 20, wherein the second-type thermal separator comprises a door connected for hinged operation over the common opening in the refrigerated article storage compartment.